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THE ELEMENTARY SCHOOL TEACHER

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GETTING OUR BEARINGS ON INDUSTRIAL EDUCATION

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The industrial-education craft has steered a devious course during her eventful voyage. Twenty-five years ago she was flying the flag of manual training at her main mast. Against headwinds—through heavy seas—sometimes apparently with faulty chart and compass, her pilots have brought her through—somewhat battered and scarred but still seaworthy. She has lately been dry-docked, scraped, and painted; equipped with twin propellers; provided with a new figure-head; renamed; compass adjusted; and now flies the pennant of industrial education.

That she is the same old craft will be evident, however, to anyone who will read the specifications of the old vessel and compare them with those of the repaired and re-christened ship that has so recently and so gallantly put out to sea. To one accustomed to the uncertainties of tacking against headwinds in a sailing vessel, and of drifting idly on a calm sea, waiting for favoring breezes, there seems to be magic in the resistless headway that our ship is making under the driving force of her engines. If only her course be true and her charts trustworthy, there can be little doubt that the newly launched craft will bring us surely and speedily toward our home port. The perils of the sea are numerous, however, and not always to be anticipated. Like the watchful mariner, we should seize every opportunity

for determining our exact position by getting our bearings on a light, a point of land, a barren rock, a fixed star, or the sun itself.

Without pursuing further this fanciful figure, let us examine directly some of the bearings of the present national agitation for industrial education. It would certainly be hazardous to make any single statement designed to give the present attitude of the country at large toward industrial education and manual training. It is possible, nevertheless, for us to find some fairly definite indications of a few tendencies and to examine very briefly the significance of these tendencies in the general educational movement of today.

The past few years have seen the organization of divisions of industrial education within state education departments; the establishment of independent commissions on industrial education, of national and state associations for the promotion of industrial education, and of a national commission on country life. The need of industrial education has been emphasized again and again by the United States Commissioner of Education, by many leading state and city superintendents of schools, by the governors of numerous states, and by the President of the United States in at least two of his messages. It has been vigorously urged by manufacturers' associations, labor organizations, associations for civic betterment, charity organizations, and political parties. State legislatures have passed favorable laws and periodical publications have given to the industrial education propaganda a degree of publicity and support that they have rarely accorded any similar public movement. Teachers' associations have given increasingly large attention to the question. The manual training department of the National Education Association has given over its programmes almost wholly to its consideration and a new department of technical education has been organized. The general programmes of the Association and of its department of superintendence have given much time to the subject and many speakers of high ability have discussed its social, economic, and educational bearing. In short, we have had almost all of the possible accompaniments of a system of

industrial education except industrial schools; and doubtless we shall have a plentiful supply of these in the very near future.

There are, in the United States, about one hundred and fifty schools of secondary grade which may properly be designated manual-training or industrial-training schools. Of this number, thirty are public high schools and are known variously as manual-training high schools, technical high schools, and mechanic-arts high schools. Most of them give from five to nine hours a week to manual, technical, and industrial instruction. Some give as little as four hours, and a few as much as twelve hours a week to such instruction. Six of the thirty schools report that they give all of their time to technical, industrial, and trade instruction; which indicates that these schools may be dealing in a serious way with genuine vocational problems and may be called industrial schools in the sense attached to that term in current discussion. In general, however, it may be said that high schools of the manual-training type are dominated by the same purpose that controls ordinary high schools and that this purpose is distinctly not vocational, unless we include attendance upon college among the vocations. It may confidently be asserted, furthermore, that with the exception of the new Cleveland high school and possibly one other, there does not exist today in the United States a public secondary school that with strict accuracy should be termed a technical high school.

Of the thirteen hundred city-school systems in the United States, almost exactly one-half have introduced, somewhere in their curricula, various forms of constructive activity known as handwork or manual training. In about one hundred and fifty of these cases handwork extends through all of the grades of the elementary school, and in about one hundred cases it is given in the high schools. In some cases handwork is given in the kindergarten only; and between this extreme and the other extreme of manual training in every grade, there are all possible differences in practice.

While on the whole, the manual-training movement has had a salutary effect in directing attention to the right relation between theory and practice in education, it is nevertheless true

that handwork in the schools is still mainly abstract, isolated, impractical, and unsocial in character. It is very largely lacking in rational content and therefore in educational worth. As "busy work" and relaxation, it no doubt performs a function of some value. The very name "manual training," however, is suggestive of a discredited psychology. With a few gratifying exceptions, handwork is a fungus growth on an otherwise ill-proportioned and misshapen curriculum that needs not so much to be pruned and trained as to be uprooted and replaced by a more vigorous and more productive plant.

To put the matter positively, the great educational need at this point is for us to recognize in our practice what many of us profess to accept in theory: that constructive handwork is an indispensable means of developing intelligent ideas, sympathetic appreciation, and executive efficiency in relation to the industrial side of human society. "Manual training," in other words, should be replaced by intelligent study of the constructive, industrial factors of social progress.

It should be noted that the kind of study here proposed might as properly be termed "industrial education," as the training for skill in industrial vocations that is everywhere now being so vigorously demanded. It may indeed be doubted whether without a basis such as that suggested, industrial education can be saved from the isolation, the unsocial, and even anti-social tendencies with which the present curricula have been charged.

A few weeks ago, I was inspecting one of the largest manufacturing establishments in New York state, which had recently organized a school for apprentices; provided it with a thoroughly modern equipment; and placed in charge a well-educated man of high ideals and practical ability. Here, I thought, I had found an enterprise that might have something to teach the schools concerning their effort to meet concrete social needs. The master-mechanic to whose initiative this school was due told me, however, that he had serious doubt as to the practical value of his apprentice school. He thought he would direct the teacher to use the machines for demonstration purposes only, as the boys spent too much time "figuring out how to get a piece

of work set up and how to get the thing done." "These boys," he said, "will work all their lives for our company and we want them to do things our way. We don't want the boys to draw; we want them to read drawings. We don't want them to figure; we want them to read figures. We don't want them to boss; we want them to be bossed." And he might have added, we don't want them to think but to become automatic machines.

The objection of this master-mechanic was to any system of training that develops initiative and independence. While his view is certainly not that of the most far-sighted manufacturers who are joining in the cry for industrial education, his attitude does represent a somewhat common tendency to regard industrial efficiency as the sole standard by which to measure the value of industrial education. There is need for a resolute stand against every attempt to exploit the efficiency of the rank and file in the interest of private greed. Education must never lend itself to any movement that ignores the fundamental truth that to make a life is of greater consequence than to make a living. By every proper means, education must seek to rectify the standards of industry itself and to promote a genuinely social consciousness among our people.

The ideals of industrial, as of all other forms of education, can be stated then only in terms of social intelligence, social appreciation, and social service. Any attempt to isolate completely the problems of industrial education must accordingly fail; for society is essentially organic and every truly social problem is shot through with a thousand threads of social complexity. In all of its essential qualities, therefore, industrial education, in common with education of every other type, must conform to the great underlying needs of men and women composing a human society.

To say that industrial education introduces no fundamentally new principles, and that every important principle applicable to industrial education applies also to education in all of its aspects, is not however to overlook the necessity of working out in detail the application of such principles to the peculiar requirements of those boys and girls who are looking toward industrial voca-

tions. A few general ideas will here be suggested which should help us to keep our bearings in making this application.

First, it is important that we make a clear distinction between elementary and secondary education. Neither in our thought nor in our practice have we thus far drawn this distinction with sufficient clearness, but have merely assumed that during the period of early adolescence the minds of boys and girls are sufficiently "mature" to warrant them in entering upon the study of Latin, algebra, geometry, and the various other subjects prescribed for admission to American colleges. From this point of view, elementary education is that uniform régime imposed upon all boys and girls who have not yet entered upon a college-preparatory course. I am sometimes disposed to think that if we had the courage to face the truth we should be compelled to admit that the present function of the elementary school is to eliminate 65 per cent. of its pupils so that the secondary schools shall not be overcrowded; and that the function of the latter, including the manual-training high schools, is to eliminate all of the residue who do not readily run into the mold handed out by the colleges.

I would propose the following as a rational as opposed to a purely formal distinction between elementary and secondary education. In the early stages of mental and social development, the similarities of children, for educational purposes, are more significant than their dissimilarities. This is the period of elementary education, when children may properly participate in a relatively uniform régime. When differences in taste, capacities, and ambitions become more significant for education than likenesses, whatever may be the arbitrary and external organization of education, the secondary stage in the development of boys and girls has *de facto* begun. Obviously this period begins at a much earlier point than is recognized in our present educational practice. The difference between elementary and secondary development is thus primarily a matter of mental and moral variation; not a mere matter of convenient arrangement. Differences in abilities and in interests will always demand corresponding variations in form of activity. If we persist in our inexcusable failure

to provide such variations during the last years of our so-called elementary course, when individual differences appear with unmistakable and increasing force, we may expect boys and girls to continue as they now do to seek in the more tolerable occupations of street, factory, shop, office, and mercantile house, the kind of interests for which they feel an instinctive though vaguely defined need.

It should be clear, then, that industrial education is properly but one constituent of an organic *system* of secondary education. Like the various other members of such a system, industrial schools should be designed to meet the specific needs of a well-defined group of children who, by reason of common interests, common capacities, and common opportunities, are looking toward a common vocation.

In the current discussion of industrial education, it is surprising that no more strenuous protest has been made against the early specialization that is clearly involved in the proposed programme. At the risk of seeming to set up a man of straw, we shall notice very briefly some important considerations in this connection.

The arguments against "early specialization" were first brought forward with great vehemence in the discussion of the "elective system" in colleges that loomed up so large on the educational horizon a generation ago. They next appeared in the debate concerning the introduction of elective courses into our high schools. While the ultimate outcome of this later contest is no longer doubtful, the voice of protest has not yet been altogether quieted. The old familiar arguments are still urged against wider opportunity and greater freedom for pupils in high schools. We may expect these same arguments to be directed in turn against every effort to extend the elective system backward to the logical beginning of the secondary stage of education.

The outcome of the struggle between rigid prescription and free election must eventually be the same in all three of these fields; for the conflict is really one and not three. The question is whether human beings who differ widely in native gifts and

acquired tendencies shall be forced to pursue a single conventional course of training, or have the privilege of choosing a course that will equip them not only for the worthy use of their leisure but for the intelligent pursuit of their vocations. Life itself is from the beginning an elective process—each individual selecting from the complex whole of experience those elements that accord with his native and acquired interests, and rejecting those elements that serve no useful purpose in his life.

In a very real sense then, it is a condition and not a theory that confronts us; for an elective system is already firmly established even in our elementary education. One of the alternatives open to a pupil is to continue in the single course offered by the schools; the other is to withdraw from school and, without adequate preparation, to enter at once upon some low-grade vocational pursuit that offers little educational advantage and a meager wage. The question is not, therefore, whether we shall extend the privilege of election to pupils now in the elementary schools; but whether, by introducing courses for industrial and domestic training within the school, we shall widen the field within which election may be made.

A rational system of secondary education, furthermore, must provide not only for the training of special capacities but for making children conscious of their individual abilities. One of the most serious weaknesses of the present organization of education is that the range of experience provided for in the schools is so narrow that many of the latent powers of children are not stimulated to activity. In order that a child may be placed in position to make proper choice of a school course and ultimately of a vocation, it is often essential that means be taken to ascertain what are his native capacities upon which success in every undertaking must very largely depend. These capacities cannot always be determined with reference merely to the desires of parents and of pupils or to such general advice as teachers and principals of schools are commonly qualified to give. Teachers must be equipped to recognize, to search for, and to interpret the evidences of special aptitude. This will necessitate a fuller recognition than is now given to the influence of heredity upon mental

and moral traits, and a more vital and practical view of genetic psychology than is yet widely prevalent.

To summarize briefly, then, we have evidences of a widespread and almost unprecedented demand for industrial education; and this demand is but one aspect of the educational unrest that is now so widely felt. While manual training has done much to vitalize the educational thought of the country, it is still largely isolated and unsocial in practice and should be replaced by a more intelligent study of the industrial element in social life. There is a noticeable tendency to set up industrial efficiency as the final standard and to look upon industrial education as a means of exploiting this efficiency in the interest of the private gain of employers of labor. Such tendencies must be steadily resisted by leaders in education.

Industrial education properly constitutes an organic part of a rational system of secondary education which should meet the specific needs of various groups of children who, on account of differing tastes and capacities, must look toward widely different vocations. Such a system will make it necessary for children, with the guidance of parents and teachers, to make choice of a career at a much earlier age than is now regarded by many as prudent. Even under existing conditions, however, children are obliged to choose between continuing in the uniform course provided by the elementary school, and entering upon vocational pursuits without adequate preparation. One of the main functions of secondary education should be to make children aware of their special aptitudes and thus to make it possible for them to choose wisely the vocations for which by nature they are best adapted.

The whole argument for vocational training is of course open to the familiar charge that it is basely utilitarian. As to the charge that it is utilitarian, why should not the answer be what the common law terms "confession and avoidance"? Such training *is* utilitarian; but why *basely* so? Most men devote more than half of their waking hours to their vocations. Are their lives necessarily on that account basely utilitarian? Our war for independence had its origin in a question of taxation.

Was it for that reason a basely utilitarian struggle for selfish ends? Almost every great national policy involves some matter of industry or commerce. Is our national life therefore unworthy of our loyal affection? The intellectual and moral progress of the race has always been in large measure dependent upon material and commercial prosperity. Are the achievements of the human spirit on that account insignificant or base? As a people we profess a belief in the dignity of work. Shall we hesitate to exemplify our belief by making it possible for every man to find his work and in his work to find a worthy means of enlarging and completing his life?